

Appn S/N 10/650,674
Amdt dated February 2, 2006
Reply to Office Action dated October 4, 2005

REMARKS

The Examiner has objected to claims 1-7, 10-13, 15, 16 and 20 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,794,056 to Warren in view of U.S. Patent No. 5,099,874 to Della Cave. The Examiner rejected claims 1, 8, 9, 12, 14 and 17-19 under 35 U.S.C. 103(a) as being unpatentable over Warren in view of U.S. Patent No. 5,992,453 to Zimmer.

In the enclosed amended claim set, claims 1 and 12 have been amended, and claims 2, 13, 14 and 20 have been cancelled.

New claims 1 and 12 now include the feature that the outflow stage and the inflow stage cooperate to maintain substantially constant liquid flow velocity throughout the non-pressurized liquid supply system. While claim 2 previously included a similar feature relating to maintaining substantially constant liquid flow *characteristics*, amended claims 1 and 12 now specify that the outflow stage and the inflow stage cooperate to maintain substantially constant liquid flow velocity throughout the non-pressurized liquid supply system. Support for this amendment is found in paragraph 11 of the specification.

The cited references are all pressurized systems. Non-pressurized systems and pressurized systems are substantially different in nature. For instance, non-pressurized fluid transport systems (piping and systems) are not flooded during the course of normal operation. They also can only transport a liquid because the driving force must be gravity; a gas simply would not have the driving force to move unless under a pressure gradient along the transport system. Furthermore, because the non-pressurized fluid transport systems are not flooded, air is typically present above the liquid in the piping. If, or when, they do become flooded at any section in the system, then the subsequent flooded sections are also under pressure. This does not happen in the normal operation of a drainage system, for example, unless there is a plug or clog in the drain line. An example of a pressurized flooded fluid transport system is a municipal fresh water delivery system with a water tower.

The approaches in both the Zimmer and Warren references both require the fluid to be a pressurized liquid or a gas. If one were to use the design in the Zimmer or Warren patents to transport non-pressurized liquid, then the two or more outflows would not have an equivalent flow rate or flow velocity. The reason for this is that a greater portion (and sometimes all) of the flow, for example, will be diverted to a lower chamber because the liquid will reside first in the lower section of the pipe in the transport system. As such, the systems in the Warren and Zimmer references are not suitable for non-pressurized fluid transport

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systems. While the Della Cave reference does describe a flow divider used in a drain pipe of a non-pressurized drain system, the applicant submits that there is no motivation to combine the divider of Zimmer, which is used in a pressurized system as a flow divider in a sewage drain system of a domestic building, with a non-pressurized system as in Della Cave. Moreover, there is no motivation to combine the references in order to again use the feature of an equal total cross sectional area before and after flow splitting in a pressurized system such as in Warren to be used in a non-pressurized system such as in Della Cave.

Amended claims 1 and 12 also further include the feature that the inflow and outflow pipes each have downstream ends that are angled toward a direction of the earth's gravity. This feature is supported in paragraphs 14, 42, 57 and 62 of the specification as originally filed. The applicant submits that while the cited references do include inflow and outflow ends that are angled so as to facilitate liquid flow, they do not specify that the inlet and outlet ends, or inflow and outflow connectors or pipes, are specifically angled at a downstream end toward a direction of earth's gravity.

The applicant submits that the combination of the downstream end angling of the inflow and outflow pipes as well as the inflow and outflow stage cooperating to maintain substantially constant liquid flow velocity throughout the non-pressurized liquid supply system is neither taught nor suggested in the cited references.

As such, the applicant submits that the new claims 1 and 12, and all claims dependent thereon, either directly or indirectly, are distinguished from the cited references and the Examiner is respectfully requested to withdraw the objections on the basis of 35 U.S.C. 103(a).

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The Commissioner is hereby authorized to charge any additional fees, and credit any over payments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,

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